

426. Ms. Case asserts that the kanaka maoli and those who share these practices physically and spiritually would not be able to recite and perform the hula traditions there because of the overwhelming sense of despair and guilt that we would be consumed with. Ex. B.21a at 5 (Case WDT).
427. Ms. Case contends that the people cannot stand by and witness the desecration, destruction and construction and then conduct the same ceremonies we have done for years on the mountain. Ex. B.21a at 5 (Case WDT).
428. For Ms. Case, it would be akin to forfeiting her right to be there if she was unsuccessful in protecting the mountain. She could not return there to chant, dance and sing in the same manner. She would not be able to pray in the way that she has been led to do. A connection would be lost between the ancestral realm and the human realm. Information shared and knowledge passed down ancestrally would be lost. Interaction between the mountain and humans would be diminished like a loss of a family member, and the death of a way of life. Ex. B.21a at 5 (Case WDT).

IV. HAWAII ADMINISTRATIVE RULE § 13-5-30(c): THE EIGHT CRITERIA

429. Section 13-5-30(c) of the HAR is the overarching framework that guides this contested case. Section 13-5-30(c) sets forth the eight criteria by which the Board is to evaluate the merits of a proposed land use in a Conservation District.
430. The University has the burden to demonstrate by a preponderance of the evidence that the TMT Project meets the eight criteria to support a recommendation of approval of the CDUA and issuance of a CDUP. HAR § 13-1-35(k) ("The party initiating the proceeding and, in the case of proceeding on alleged violations of law, the department, shall have the burden of proof, including the burden of producing evidence as well as the burden of persuasion. The quantum of proof shall be a preponderance of the evidence.").
431. In preparing the CDUA, the University's consultants relied on a wide variety of materials as well as consultation with, *inter alia*, specialists and archaeologists. (White) Tr. 10/24/16 at 12:14-13:10 (White).
432. The CDUA was prepared in 2010. Whether a CDUA requires revisions or updates does not depend upon the mere passage of time; rather, it depends on the particular facts of the situation. (White) Tr. 10/24/16 at 186:10-13 (White). White, the primary author of the CDUA, testified that he knows of no new fact that would change his assessment of the CDUA. (White) Tr. 10/24/16 at 187:9-18.
- A. CRITERION ONE, HAR § 13-5-30(C)(1): "THE PROPOSED LAND USE IS CONSISTENT WITH THE PURPOSE OF THE CONSERVATION DISTRICT[.]"
433. The Conservation District statute is designed "to conserve, protect and preserve the important natural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety and welfare." HRS § 183C-1.

434. The Conservation District administrative rules are designed "to regulate land-use in the conservation district for the purpose of conserving, protecting, and preserving the important natural and cultural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare." HAR § 13-5-1.
435. Astronomy development is an expressly permitted use within the Conservation District with a valid CDUP; the Conservation District rules are designed to appropriately regulate and manage land uses. HAR § 13-5-24(c); HRS § 183C-1.
436. To meet Criterion One, the TMT Project must be reviewed to determine if the proposed land use will be appropriately managed and used to protect, preserve and promote the long-term sustainability of important natural resources, public health, safety and welfare.
437. The 11,288-acre MKSR is within the Conservation District. Ex. A-9 at 3-1. The proposed TMT Project is within the MKSR's 525-acre Astronomy Precinct. Ex. A-1/R-1 at 1-6. Currently, there are eight optical and/or infrared observatories, and three submillimeter observatories in the Astronomy Precinct. Ex. A-1/R-1 at 1-1.
438. The CDUA outlines how the proposed use within the already-developed Astronomy Precinct is consistent with the purpose of the Conservation District to conserve, protect, preserve and promote the long-term sustainability of the surrounding areas within the MKSR, which are at present used principally for scientific astronomical activities. Ex. A-1/R-1 at 2-1 to 2-2.
439. The CDUA also contains descriptions of practices and protocols that provide for "appropriate management and use" to promote the long-term sustainability of resources and the public health, safety, and welfare within the Conservation District. Ex. A-1/R-1.
440. The TMT Project will promote the health, safety and welfare of the public through the advancement of scientific study, providing educational benefits in the form of telescope viewing time for the University's students and researchers, advancing STEM educational opportunities for Hawai'i residents through the community benefits package, and other measures. Ex. A-1/R-1; WDT Dr. Hasinger at 2-6.
441. The TMT Project will be subject to management through the BLNR-approved CMP and sub-plans, the TMT Management Plan, which complies with Ex. 3 of HAR § 13-5 et seq., and the BLNR-imposed conditions to the CDUP, as well as the University's internal Master Plan. Ex. A-1/R-1 at 2-1. The TMT Project is consistent with the foregoing plans. Ex. A-1/R-1 at 2-2. The comprehensive management framework appropriately addresses cultural and natural resources, public access, and the ultimate decommissioning of the Project and restoration of its site.
442. The relevant plans, sub-plans, and permit conditions require the University and TIO to conserve, protect, and preserve the important natural and cultural resources of the State, and promote their long-term sustainability, as well as promoting the health, safety, and welfare of the public. Ex. A-9 at 7-40.

443. The relevant plans, sub-plans, and permit conditions require the TMT Project to comply with the Conservation District rules and applicable laws and regulations. Ex. A-9 at 7-40.
444. The natural resource characteristics that make Mauna Kea uniquely suitable for astronomy (including its elevation, stable atmospheric clarity, low humidity and absence of light pollution), making it arguably the single best location in the northern hemisphere to conduct astronomical research, are also "important natural resources of the State" that must be appropriately managed and used to "promote their long-term sustainability and the public health, safety, and welfare." HRS § 183C-1; WDT Dr. Hasinger at 1; Ex. A-9 at A4-13 to A4-15.
445. Based on a review of the TMT Project's design, mitigation efforts, planned financial contributions to the management of MKSR, and its consistency with the objectives and provisions of the applicable plans, the TMT Project will conserve, protect and promote these unique and important astronomical natural resources of the State. WDT White at 2-5; Ex. A-1/R-1 at 2-2.
446. As the BLNR has acknowledged in the past, astronomy is an environmentally responsible and economically sustainable use that does not extract a large amount of resources, and does not consume significant natural resources once constructed. WDT White at 5; (White) Tr. 10/20/16 at 60:5-7, 92:17-94:7.
447. The design of the TMT Project complies with the goals and objectives of the Master Plan, the purpose of which is to protect and preserve the resources of the UH Management Area on Mauna Kea, and with the CMP and sub-plans for Mauna Kea. Ex. A-48 at II-1 to II-4; WDT White at 3; WDT Nagata at 7-10; (White) Tr. 10/20/16 at 60:7-10, 61:2-62:9; (White) Tr. 10/24/16 at 15:17-17:11.
448. The CMP and sub-plans provide management strategies designed to preserve and protect the resources located in the UH Management Area. These plans are the BLNR-approved management documents for the UH Management Area on Mauna Kea, and they provide the management framework and strategies that protect, preserve, and enhance the resources within the UH Management Area. The TMT Project is consistent with the CMP and sub-plans. WDT Nagata at 3-4; WDT White at 3-5; (White) Tr. 10/20/16 at 59:15- 60:10; (White) Tr. 10/24/16 at 15:17-17:15, 129:11-15; *see generally* Exs. A-9 to A-13.
449. In compliance with Ex. 3 of HAR Chapter 13-5 *et seq.* (entitled "Management Plan Requirements"), TIO has developed a TMT Management Plan (attached as Ex. A-1/R-1 at Ex. B) that adopts the approach, goals, objectives, findings, recommendations, and management strategies and actions of the CMP and sub-plans in their entirety. Ex. A-1/R-1 at 2-3 to 2-4. The TMT Management Plan is intended to guide various activities within the TMT Project area. WDT White at 4; *see generally* Ex. A-1/R-1, Ex. B; (White) Tr. 10/24/16 at 63:8-13. As previously stated, the CMP and its sub-plans have been approved by the BLNR. *See* FOF No. 135; Ex. A-26 at 36-37.

450. The TMT Management Plan is the management plan required under HAR § 13-5-24. The TMT Management Plan provides a general description of the proposed TMT Project, the existing conditions on the parcel, proposed land uses on the parcel, and reporting schedule. It also provides for implementation of all relevant action items in the CMP and sub-plans on a site-specific basis. This ensures that the management actions called for in the CMP and sub-plans are effectively and responsibly implemented in the TMT project areas. WDT White at 4; Ex. B of Ex. A-1/R-1; (White) Tr. 10/20/16 at 59:19-60:10.
451. The TMT Management Plan sets forth mitigation measures in the form of best management practices and conservation methods intended to mitigate the impacts of the TMT Project on Mauna Kea's varied resources (see, for example, Table 4-1 in Ex. B of the TMT CDUA). The TMT Management Plan provides site-specific information and complements the CMP and sub-plans. Both mitigation and avoidance are consistent with the goals of the Conservation District. (White) Tr. 10/24/16 at 227:23-228:4. By following the applicable provisions of all of the plans (the Master Plan, CMP, sub-plans, and TMT Management Plan), the University and TIO will fulfill the purpose of the Conservation District concerning the TMT Project. WDT White at 4; WDT Nagata at 7-10; Ex. A-1/R-1, Ex. B, Table 4-1.
452. Other mitigation measures include the THINK Fund and the WPP, which were developed and shaped in large part to respond to community input and suggestions. In the extensive scoping process for the TMT Project, one of the most frequently raised issues was the local community's desire to have the Project positively affect the socioeconomic landscape of Hawai'i Island and increase the potential for residents to work for the TMT Project during its construction and operation. Ex. A-3/R-3, § 1.6.3, at 1-4 to 1-5.
453. Petitioners and Opposing Intervenors contend that the economic benefits of the TMT Project described above should not be considered mitigation measures.
454. The University and TIO have committed themselves to developing and operating the TMT Project in compliance with Conservation District Rules, the CMP and its sub-plans, the TMT Management Plan, and all conditions included in a CDUP. (White) Tr. 10/20/16 at 61:17-22. Adherence to the Conservation District rules, the CMP and its sub-plans, the TMT Management Plan and a CDUP will ensure proper management. (White) Tr. 10/20/16 at 61:23-62:9.
455. The TMT Project is the first proposed astronomical observatory since the inception of the Master Plan to commit to contributing funds to assist in the management of Mauna Kea. WDT White at 3.
456. The TMT Project will not have a significant or adverse impact on area water resources, including the waters of Lake Waiau and Mauna Kea's underlying groundwater. The TMT Observatory will use a zero-discharge wastewater system. Ex. A-3/R-3 at 3-120. The TMT Project will not threaten the health, safety and welfare of the public, with regard to water resources. WDT White at 5; WDT Hayes at 23-28; *see generally* WDT Nance.

457. The TMT Project will make optimum use of the natural resources that make Mauna Kea one of the best places on Earth to conduct astronomical research. These resources include Mauna Kea's altitude, location at a favorable latitude, atmospheric clarity and stability, general lack of cloud cover, low humidity, low mean temperature and temperature variability, and distance from light pollution. The TMT Project will make use of these natural resources in a sustainable manner. Tr. 10/27/16 at 337:22-338:12; (White) Tr. 10/20/16 at 92:17-94:13; (White) Tr. 10/24/16 at 50:8-11; WDT Dr. Hasinger at 1.
458. The TMT Project will allow the people of Hawai'i to continue to use and benefit from the astronomical resources of Mauna Kea and to maintain the University at the forefront of astronomy. (White) Tr. 10/20/16 at 62:3-9.
459. TIO has committed to developing, in compliance with the CMP and the Decommissioning Plan and as approved by the BLNR, a project-specific decommissioning plan through which it intends to restore the Project site at the end of the useful life of the TMT Observatory, or at the end of the General Lease if extended, or if a new General Lease is not executed. WDT White at 5; Ex. A-1/R-1, Ex. B, 4-39 to 4-44. The specific details of the decommissioning of the TMT Observatory will be determined once decommissioning is determined to be required, or approximately five years in advance of planned decommissioning. (White) Tr. 10/20/16 at 131:16-132:6.
460. As detailed in the TMT FEIS, CDUA, and Management Plan, TIO has committed to implementing a number of measures and management actions intended to address and effectively mitigate the impacts of the Project. *See generally* Ex. A-1/R-1, A-3/R-3, A-4/R-4 and A-5/R-5. Harm to resources on Mauna Kea that has already occurred will be mitigated by providing resources for the management of Mauna Kea and through public education about Mauna Kea's resources. (White) Tr. 10/24/16 at 89:17-24.
461. The management of the TMT Project addresses cultural and natural resources, public access, and the ultimate decommissioning of the Project and restoration of its site.
462. Implemented in accordance with its plans, the TMT Project will not consume significant natural resources; will not pollute; will not harm species of concern, or the environment generally; will not prevent contemporary, customary, historical and traditional cultural practices; will not impede recreational uses; and will not threaten the public health, safety, or welfare.
463. Implemented in accordance with its plans, the TMT Project will make optimum and sustainable use of the natural resources that make Mauna Kea an ideal location for astronomy; will facilitate the management of Mauna Kea; will be an enormous benefit to the public welfare by contributing significant funds to Hawai'i Island; will provide jobs; will inject significant money spending and revenues into the local economy; will contribute new programs and funds to Hawai'i Island schools; will enable the University to remain at the forefront of astronomy in research and education; and contribute to the overall knowledge base of mankind. Those discoveries made using TMT will provide inspiration to generations of students for which many of Hawai'i's citizens can be proud.

(Dr. Stone) Tr. 12/19/16 at 108:19-22.

464. Tajon, who appeared on behalf of Kakalia, testified that in his opinion the TMT Project is not consistent with the purpose of the Conservation District because he felt there was no community input. Tr. 2/27/17 at 15:5-15:10. The extent of community input is not the proper standard by which to determine whether or not a project is consistent with the purpose of the Conservation District. Moreover, as discussed herein, the credible evidence demonstrates that significant community input was sought and generated for this project at various public approval stages. In any event, as discussed above, the TMT Project complies with the purpose of the Conservation District, as set forth in the applicable authorities. *See supra* at FOF Section IV.A.
465. Prof. Fujikane, a witness for KAHEA, testified that the TMT Project is not consistent with the purpose of the Conservation District because the TMT Project will be built in a pristine area of Mauna Kea that is viewed as the firstborn child of Papahānaumoku, Earth Mother, and Wākea, Sky Father. Ex. B.13a (WDT Prof. Fujikane) at 4.
466. Paradoxically, Prof. Fujikane also opined that Mauna Kea is overbuilt and that there are no mitigation measures that can remedy the area. Tr. 1/9/17 at 226:9-226:13.
467. White testified that because of the proposed mitigation measures the construction and operation of the TMT Project will not have a substantial adverse impact on natural resources in the area. WDT White at 7-8.
468. Dr. Kahakalau, a witness for the Flores-Case 'Ohana, argued that the TMT Project is not consistent with the Conservation District because any construction will have some impact on the existing environment. Dr. Kahakalau explained: "Conserving, conservation, means to take care of the things that are currently there. Any construction will have an impact on the things that are currently there, and therefore not conserving. Not just the individual things like rocks or whether there are plants or whether there are animals or insects and all of that, but also the entire atmosphere of this district that is designed to conserve the cultural, spiritual and natural landscape of that place." Vol. 23, 1/9/17 at 122:18-123:8.
469. Based upon reliable, credible evidence, the TMT Project is consistent with the purpose of the Conservation District.
- B. CRITERION TWO, HAR § 13-5-30(C)(2): "THE PROPOSED LAND USE IS CONSISTENT WITH THE OBJECTIVES OF THE SUBZONE OF THE LAND ON WHICH THE USE WILL OCCUR[.]"
470. The Conservation District is divided into various subzones, some more restrictive than others. Uses that are not appropriate in the most restrictive subzone may be appropriate in the Resource subzone. (White) Tr. 10/20/16 at 60:15-61:1.
471. The TMT Project will be located in the Resource subzone. Ex. A-2/R-2 at SS-1.
472. Amendments to the Conservation District Rules were adopted by the BLNR on August